



IFW

Docket No.: 0113019.00172US4  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Stephen J. BEEBE et al. Confirmation No.: 7183  
Application No.: 10/564,994 Art Unit: 1636  
Filed: July 24, 2006 Examiner: Not Yet Assigned  
Title: APPARATUS FOR GENERATING ELECTRICAL PULSES AND  
METHODS OF USING THE SAME

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT (IDS)**

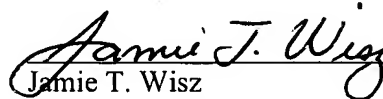
Dear Sir:

This Information Disclosure Statement is being filed prior to the mailing date of a first Office Action on the merits. No fee is required.

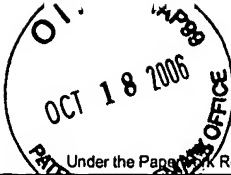
Applicants request that the Examiner initial and return a copy of the enclosed Form PTO SB-08 with the next communication.

Respectfully submitted,

Dated: October 18, 2006

  
Jamie T. Wisz  
Registration No.: 58,429  
Attorney for Applicant(s)

Wilmer Cutler Pickering Hale and Dorr LLP  
1875 Pennsylvania Avenue, NW  
Washington, DC 20006  
(202) 663-6000 (telephone)  
(202) 663-6363 (facsimile)



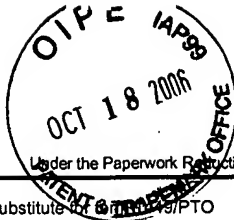
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)			<b>Complete if Known</b>		
			Application Number	10/564,994-Conf. #7183	
			Filing Date	July 24, 2006	
			First Named Inventor	Stephen J. BEEBE	
			Art Unit	1636	
			Examiner Name	Not Yet Assigned	
Sheet	1	of	2	Attorney Docket Number	0113019.00172US4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
	AA*	US-5,589,466	12-31-1996	Felgner et al.	
	AB*	US-6,326,177	12-04-2001	Schoenbach et al.	
	AC	US-2002/0010491	01-24-2002	Schoenbach et al.	
	AD	US-2003/0170898 A1	09-11-2003	Gundersen et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. \* CITE NO.: Those application(s) which are marked with an single asterisk (\*) next to the Cite No. are not supplied (under 37 CFR 1.98(a)(2)(iii)) because that application was filed after June 30, 2003 or is available in the IFW. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	CA	Beebe et al. "Diverse Effects of Nanosecond Pulsed Electric Fields on Cells and Tissues" DNA and Cell Biology, Vol. 22, No. 12, pages 785-796 (2003).			
	CB	Beebe et al. "Nanosecond, High-Intensity Pulsed Electric Fields Induce Apoptosis in Human Cells" The FASEB Journal express article 10.1096/fj.02-0859fje. (2003).			
	CC	Beebe, et al. "Nanosecond Pulsed Electric Field (nsPEF) Effects on Cells and Tissues: Apoptosis Induction and Tumor Growth Inhibition" IEEE Transactions on Plasma Science, Vol. 30, No. 1, pages 286-292 (2002).			
	CD	Beebe, et al. "Nanosecond Pulsed Electric Fields Modulate Cell Function Through Intracellular Signal Transduction Mechanisms" Physiological Measurement, Vol. 25, pages 1077-1093 (2004).			
	CE	Beebe, et al. "Nanosecond, High-Intensity Pulsed Electric Fields Induce Apoptosis in Human Cells" Vol. 17, pages 1493-1495 (2003).			
	CF	Behrader et al. "Electrochemotherapy, a New Antitumor Treatment" First Clinical Phase I-II Trial, Cancer, Vol. 72, No. 12, pages 3694-3700 (1993).			
	CG	Buescher, et al. "Effects of Submicrosecond, High Intensity Pulsed Electric Fields on Living Cells - Intracellular Electromanipulation" Vol. 10, No. 5, pages 788-794 (2003).			
	CH	Cech "Ribozymes and Their Medical Implications" JAMA, Vol. 260, No. 20, pages 3030-3034 (1988).			
	CI	Chen et al. "Leukemic Cell Intracellular Responses to Nanosecond Electric Fields" Biochemical and Biophysical Research Communications, Vol. 317, pages 421-427 (2004).			
	CJ	Cole "Electric Impedance of Marine Egg Membranes" Vol. 33, pages 966-972 (1937).			
	CK	Deng et al. "The Effects of Intense Submicrosecond Electrical Pulses on Cells" Biophysical Journal, Vol. 84, pages 2709-2714 (2003).			
	CL	Dev et al. "Electrochemotherapy - A Novel Method of Cancer Treatment" Cancer Treatment Reviews, Vol. 20, pages 105-115 (1994).			
	CM	Dev et al. "Medical Applications of Electroporation" IEEE Transactions on Plasma Science, Vol. 28, No. 1, pages 206-223 (2000).			
Examiner Signature				Date Considered	



<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>			<b>Complete if Known</b>		
			Application Number	10/564,994-Conf. #7183	
			Filing Date	July 24, 2006	
			First Named Inventor	Stephen J. BEEBE	
			Art Unit	1636	
			Examiner Name	Not Yet Assigned	
Sheet	2	of	2	Attorney Docket Number	0113019.00172US4

CN	Djuzenova et al. "Effect of Medium Conductivity and Composition on the Uptake of Propidium Iodide Into Electroporabilized Myeloma Cells" Biochimica et Biophysica Acta 1284, pages 143-152 (1996).
CO	Hasselhoff, Nature, Vol. 334, No. 6183, pages 585-591 (1988).
CP	Helene "The Anti-Gene Strategy: Control of Gene Expression by Triplex-Forming-Oligonucleotides" Anti-Cancer Drug Design, Vol. 6, pages 569-584 (1991).
CQ	Heller et al. "Phase I/II Trial for the Treatment of Cutaneous and Subcutaneous Tumors Using Electrochemotherapy" Cancer, Vol. 77, No. 964-971 (1996).
CR	Hofmann et al. "Electric Field Pulses Can Induce Apoptosis" J. Membrane Biol., Vol. 169, pages 103-109 (1999).
CS	Hofmann et al. "Electroporation Therapy: A New Approach for the Treatment of Head and Neck Cancer" IEEE Transactions on Biomedical Engineering, Vol. 46, No. 6, pages 752-759 (1999).
CT	Maher et al. "Oligonucleotide-Directed DNA Triple-Helix Formation: An Approach to Artificial Repressors?" Antisense Research and Development, Vol. 1, pages 277-281 (1991).
CU	Mankowski et al. "A Review of Short Pulse Generator Technology" IEEE Transactions of Plasma Science, Vol. 28, No. 1, pages 102-108 (2000).
CV	Mir et al. "Mechanisms of Electrochemotherapy" Advanced Drug Delivery Reviews 35, pages 107-118 (1999).
CW	Neumann et al. "Fundamentals of Electroporative Delivery of Drugs and Genes" Bioelectrochemistry and Bioenergetics, Vol. 48, pages 3-16 (1999).
CX	PCT Search Report for Application No. PCT/US2004/023078 dated November 30, 2005.
CY	Schoenbach et al. "Bioelectrics-New Applications for Pulsed Power Technology" IEEE Transactions on Plasma Science, Vol. 30, No. 1, pages 293-300 (2002).
CZ	Schoenbach et al. "Biological/Medical Pulsed Electric field Treatments" pages 42-46 (2000).
CA1	Schoenbach et al. "Intracellular Effect of Ultrashort Electrical Pulses" Bioelectromagnetics, Vol. 22, pages 440-448 (2001).
CB1	Schoenbach, et al. "Bacterial Decontamination of Liquids with Pulsed Electric Fields" Vol. 7, No. 5, pages 637-645 (2000).
CC1	Schoenbach, et al. "The Effect of Pulsed Electric Fields on Biological Cells: Experiments and Applications" Vol. 25, No. 2, pages 284-292 (1997).
CD1	Schoenbach, et al. "Ultrashort Electrical Pulses Open a New Gateway Into Biological Cells" Proceedings of the IEEE, Vol. 92, No. 7, pages 1122-1137 (2004).
CE1	Vernier et al. "Calcium Bursts Induced by Nanosecond Electric Pulses" Biochemical and Biophysical Research Communications, Vol. 310, pages 286-295 (2003).
CF1	Weaver "Electroporation of Cells and Tissues" pages 1431-1440 (1995).
CG1	Weaver et al. "Theory of Electrical Creation of Aqueous Pathways Across Skin Transport Barriers" Advanced Drug Delivery Reviews, Vol. 35, pages 21-39 (1999).
CH1	White et al. "Stimulation of Capacitative Calcium Entry in HL-60 Cells by Nanosecond Pulsed Electric Fields" The Journal of Biological Chemistry, Vol. 279, No. 22, pages 22964-22972 (2004).
CI1	Zimmermann et al. "Electromanipulation of Mammalian Cells: Fundamentals and Application" Vol. 28, No. 1, pages 72-82 (2000).

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	Date Considered
--------------------	-----------------